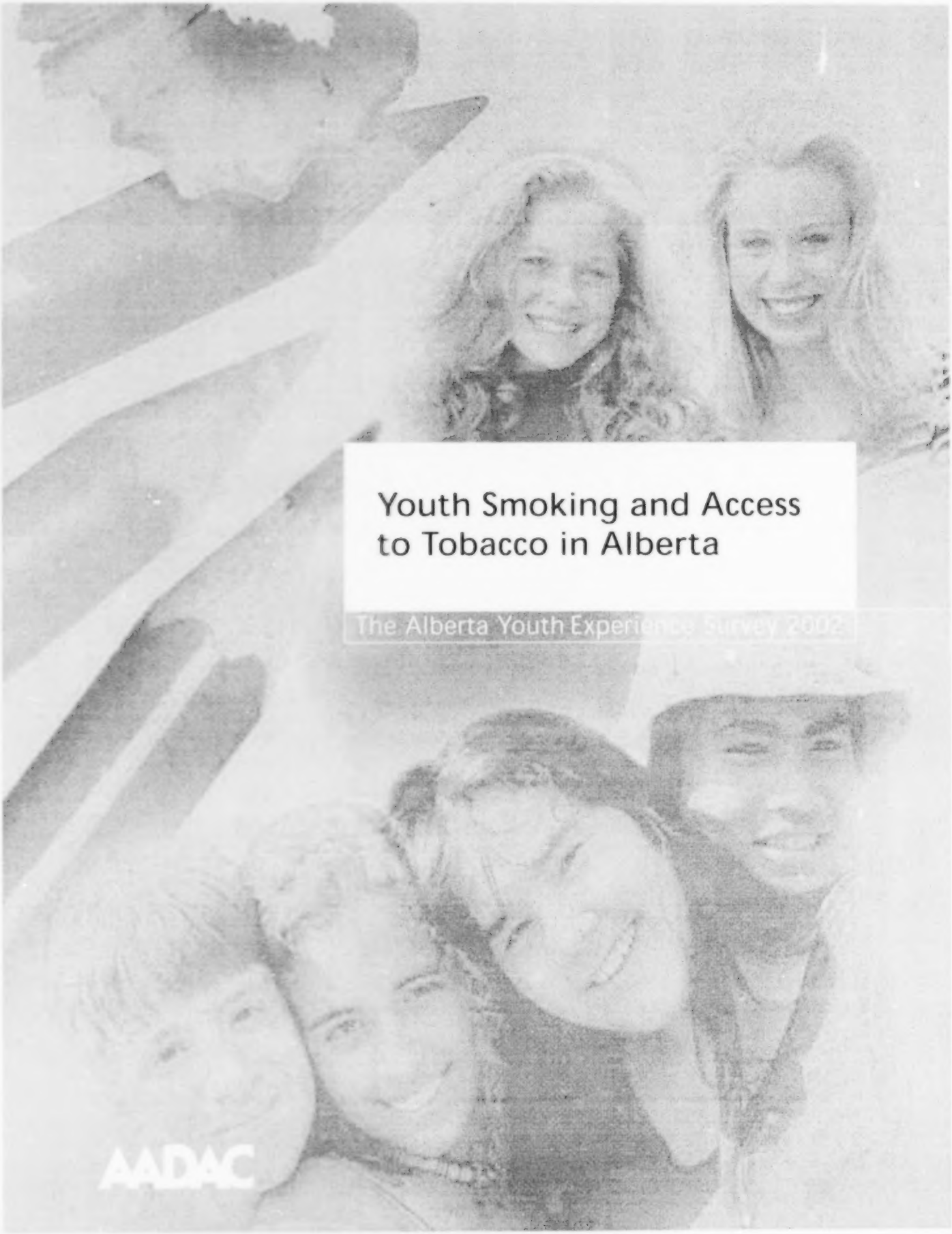

Youth Smoking and Access to Tobacco in Alberta

The Alberta Youth Experience Survey 2002

AADAC

106-02799/

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Prepared by AADAC Research Services
Josh Marko, MPH
Allison McKinnon, PhD
Art Dyer, MA

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EXECUTIVE SUMMARY

The Alberta Youth Experience Survey 2002 (TAYES) sought to answer questions about the proportion of Alberta youth who used alcohol, tobacco, or other drugs or who gambled and the proportion of Alberta youth who used substances or participated in gambling in a harmful way. The survey also sought to investigate the factors that increased adolescents' protection from harmful substances, or increased their risks of substance use or abuse or gambling.

Three reports have been prepared based on TAYES: the Summary Report, the Technical Report, and the Overview of Risk and Protective Factors (Alberta Alcohol and Drug Abuse Commission [AADAC], 2003a,b,c). This report is one of a series of special topical reports, which are intended to provide greater detail on TAYES results and relevant literature than is contained in the Summary Report.

The purpose of this report is to examine youth tobacco use, with a special focus on youth access to tobacco. This report shows where Alberta youth obtain tobacco and how easy it is for them to obtain tobacco. Youth access laws and the effectiveness of the laws in reducing both youth access to tobacco and youth smoking rates are also examined.

Key findings from the literature

Tobacco use among youth

Youth smoking rates have been decreasing in Canada in recent years (Adlaf & Paglia, 2001; Health Canada, 2002a; Poulin, 2002). Youth aged 15 to 17 have much lower smoking rates than 18- and 19-year-olds in Canada (Health Canada, 2002b). Youth tend to be experimental smokers (Adlaf & Paglia; Ross & Chaloupka, 2001) and smoke much less than people in older age categories (Health Canada, 2002b).

Sources of tobacco

Younger youth, aged 12 to 15, typically obtain tobacco from social sources, such as family and friends (DiFranza & Coleman, 2001; Forster, Chen, Blaine, Perry, & Toomey, 2003; Robinson, Klesges, & Zbikowski, 1998). Older youth, aged 16 and 17, rely on getting tobacco from commercial sources, such as retail stores, particularly gas stations and convenience stores (Centers for Disease Control and Prevention [CDC], 1995; CDC, 1996).

Perceived ease of access to tobacco

In almost all published surveys, youth in grades 7 through 12 report having an easy time obtaining tobacco (Cummings, Hyland, Perla, & Giovino, 2003; Forster, Klepp & Jeffrey, 1989; Jones, Sharp, & Husten, 2002). This is true for smokers and non-smokers alike.

Youth access laws

Evidence is mixed about whether youth access laws reduce either perceived ease of access to tobacco or youth smoking rates. However, if a comprehensive tobacco control strategy is implemented, then youth access laws can reduce perceived ease of access to tobacco and youth smoking rates. Youth access laws may also be effective communication tools to increase youth awareness about the hazards of tobacco use (Canadian Cancer Society, 2002).

Key findings from TAYES

Tobacco use among youth

In Alberta, 16% of all surveyed youth smoked cigarettes within the last 12 months. There were no significant gender differences. Smoking rates did, however, increase with age. The smoking rate among youth aged 15 to 17 was higher than among 12- to 14-year-olds (25% versus 7%). Aboriginal youth had more than double the number of smokers (37%) than non-Aboriginal youth (16%).

In the last 12 months, 8% of all youth had used chewing tobacco at least once. More Aboriginal youth (32%) used chewing tobacco than non-Aboriginal youth (7%).

Sources of cigarettes

The leading sources of cigarettes for Alberta youth smokers aged 17 or younger are as follows:

1) given by a friend or someone else (52%)

2) bought from a friend or someone else (34%)

3) bought by the youth at a small grocer or corner store (31%)

4) bought by the youth at a gas station (29%)

5) taken from a family member (18%)

Youth aged 12 to 15 usually rely on people giving them cigarettes or take them from family members or others. In contrast, 16- and 17-year-olds frequently purchase cigarettes from retail stores, especially small grocers and gas stations.

Perceived ease of access to tobacco

When asked how easy it was to get cigarettes, 78% of all students, excluding those that responded "don't know," thought that it was easy to obtain cigarettes. Among youth smokers, 96% thought that it was easy to obtain cigarettes.

Relationship between perceived ease of access and tobacco use

No significant relationship was found between perceived ease of access to tobacco and tobacco use among youth smokers.

Refused sale of tobacco

Among youth smokers who reported buying cigarettes, 52% have had their purchase of cigarettes refused by retailers. This finding suggests that many youth smokers are able to buy cigarettes from retail stores even though it is illegal.

INTRODUCTION

The Alberta Youth Experience Survey 2002 (TAYES) sought to answer questions about the proportion of Alberta youth who used alcohol, tobacco, or other drugs or who gambled and the proportion of Alberta youth who used substances or participated in gambling in a harmful way. The survey also sought to investigate the factors that increased adolescents' protection from harmful substances, or increased their risks of substance use or abuse or gambling.

Three reports have been prepared based on TAYES: the Summary Report, the Technical Report, and the Overview of Risk and Protective Factors (Alberta Alcohol and Drug Abuse Commission [AADAC], 2003a,b,c). This report is one of a series of special topical reports, which are intended to provide greater detail on TAYES results and relevant literature than are contained in the Summary Report.

The purpose of this report is to examine youth tobacco use in Alberta, with a focus on youth access to tobacco, and to address the following questions.

Tobacco Use

- What is the youth smoking rate?
- What is the youth chewing tobacco rate?
- How much do youth smoke per day?
- In what grades do youth begin to smoke?

Access to Tobacco

- Where do youth obtain tobacco?
- How easy is it for youth to obtain tobacco?
- Is perceived ease of access to tobacco related to youth smoking rates?
- How many youth have ever bought tobacco?
- How often are youth asked for proof of age when purchasing tobacco?
- How often are youth refused the sale of tobacco?

Youth Access Laws

- What are youth access laws in Canada and Alberta?
- What is the level of retailer compliance with youth access laws?
- How well do youth access laws work in reducing both youth access to tobacco and youth smoking rates?

LITERATURE REVIEW

Tobacco use

Tobacco use among youth

The smoking rate among 15- to 19-year-olds has been decreasing in recent years in Alberta. The percentage of current smokers in this age group has decreased from 26% in 1999 to 19% in 2002 (Health Canada, 2003).

The smoking rate among 15- to 19-year-olds across Canada has also been decreasing, from 28% in 1999 to 22% in 2002 (Health Canada, 2002a). The smoking rate among 15- to 17-year-olds was only 18% in Canada, but was 28% among 18- and 19-year-olds (Health Canada, 2002b).

Declining youth smoking rates have been reported in other Canadian provinces. Poulin (2002) found a decrease in the percentage of Nova Scotia students in grades 7, 9, 10, and 12 who smoked cigarettes during the past year from 36% in 1998 to 23% in 2002. Similarly, Adlaf and Paglia (2001) reported that the proportion of Ontario students in grades 7 to 12 who smoked cigarettes during the past year decreased from 29% in 1999 to 24% in 2001.

The smoking rate among First Nations and Inuit people in Canada aged 20 to 24 was reported at 72% in 1997, which, at that time, was more than double the national average (Reading, 1999). High rates of smoking among First Nations people are a concern across Canada.

Chew tobacco rates

Chew tobacco rates among youth are much lower than cigarette smoking rates in Canada. For example, Poulin (2002) reported that 4.8% of Nova Scotia students in grades 7, 9, 10, and 12 had used chewing tobacco in the last 12 months.

Amount smoked per day

The number of cigarettes smoked per day increases with age and tends to be higher among males. For example, according to the 2002 CTUMS, daily smokers aged 15 to 19 consumed an average of 13 cigarettes per day (14 for males versus 12 for females). Daily smokers aged 25 to 34 years consumed 14 cigarettes per day, and smokers aged 35 to 44 consumed 18 cigarettes per day. In Alberta in 2002, daily smokers aged 15 to 19 consumed an average of 12 cigarettes per day (Health Canada, 2002b).

Adlaf and Paglia (2001) reported that Ontario students in grades 7 to 12 who smoked cigarettes during the previous year, consumed an average of 5.6 cigarettes per day. Similarly, Ross and Chaloupka (2001) reported that high school student smokers in the United States in 1996 consumed about six cigarettes per day. These amounts are lower than those reported in CTUMS, possibly because the Ontario and United States surveys included a younger population than was included in the CTUMS sample.

When youth start smoking

Based on results from the 2000 CTUMS, Health Canada (2002a) reported that among persons who have ever smoked, almost all first started in their teens, with at least half having tried smoking by age 15. No significant gender differences were noted in how early people began smoking.

Access to tobacco

Sources of tobacco

Sources of tobacco can be categorized into either social sources or commercial sources. Examples of social sources are friends, family, and others who give or sell tobacco to youth. Examples of commercial sources are retail stores like supermarkets, drug stores, gas stations, convenience stores, and vending machines.

In Canada, commercial sources have been shown to be the most important source of tobacco for older youth smokers. For example, according to the 2000 CTUMS, 41% of 15- to 17-year-old smokers bought cigarettes mainly from a small convenience store, versus 66% of 18- and 19-year-olds (Health Canada, 2002a).

Similarly, the Centers for Disease Control and Prevention [CDC] (1995) reported, based on a United States national survey, that youth were more likely to buy cigarettes from stores as the youths aged. By Grade 11, over half of all students who smoked bought their cigarettes in stores. Similarly, in two national surveys completed in the United States, the CDC (1996) reported that 16- and 17-year-olds were more likely than 12- to 15-year-olds to buy cigarettes from small stores.

Social sources are becoming more important for youth, especially for younger youth and occasional smokers (Croghan, Aveyard, Griffin, & Cheng, 2003). Robinson et al. (1998) found that Grade 7 youth in the United States were more likely to get cigarettes from friends than to buy them in stores. DiFranza and Coleman (2001) found that young smokers (pre-high school) in Massachusetts were reliant on parents and friends for their tobacco needs. Older high school smokers relied on teenage store clerks for most of their tobacco needs. Based on a 1996 United States national study of 13- to 19-year-olds, Castrucci, Gerlach, Kaufman, and Orleans (2002) suggested that younger smokers who believe commercial purchases are difficult were more likely to use social sources. In addition, females were more likely to acquire tobacco through social sources than males were. Forster et al. (2003) found in a survey of students in grades 8 to 10 in Minnesota that 69% of past-month smokers had obtained their last cigarette from another person. Only 14% of past-month smokers obtained their last cigarette from a business.

The Internet is a potential new source of tobacco for youth that has yet to be fully researched. Ribisl (2003a) suggested that although the Internet is not currently a prominent source of cigarettes for youth, it could become an important source if youth have difficulty obtaining cigarettes from traditional commercial or social sources.

Perceived ease of access to tobacco

Youth, for the most part, have relatively easy access to tobacco. Forster et al. (1989) reported that in a survey of almost 1,000 Grade 10 students in Minnesota in 1987, almost 90% of regular smokers said it would be very easy to obtain cigarettes. Even non-smokers in this survey reported easy access to tobacco. Similarly, Cummings et al. (2003) reported the results of surveys of over 4,000 Grade 9 students in New York in 1992 and 1996. The authors found that an average of 92% of 30-day smokers said that it would be easy to get cigarettes. Jones, Sharp, and Husten (2002) reported findings from a 1999 survey in the United States that showed 88% of Grade 10 students thought it would be "fairly easy" or "very easy" to obtain cigarettes.

Due to the limited research in Canada on perceived ease of access to tobacco, TAYES results will shed new light on this important aspect of youth tobacco prevention and cessation policies.

Relationship between perceived ease of access to tobacco and youth smoking rates

Previously reported TAYES results revealed a weak non-significant relationship between smoking behaviour and ease of access to cigarettes among all students in the survey (AADAC, 2003b). In contrast, Unger et al. (2002) reported the results of a 1998 study of over 12,000 grade 7 to 9 students in California and China. This study showed access to cigarettes was associated with an increased risk of lifetime smoking and, in the California sample, an increased risk of 30-day smoking.

Buying tobacco

Based on results from five surveys done in the United States, Forster, Wolfson, Murray, Wagenaar, and Claxton (1997) reported that between 20% and 70% of teenagers who smoke purchased their own tobacco. Similarly, the CDC (1996) reported that 62% of smokers aged 12 to 17 usually bought their own cigarettes. In contrast,

Adlaf and Paglia (2001) reported that 12% of grade 7 to 13 students in Ontario had bought cigarettes in the previous four weeks. This percentage is low because Adlaf and Paglia (2001) only reported buying behaviour within the previous month.

Proof of age

According to the 2000 CTUMS, only 54% of youth smokers aged 15 to 17 said they were asked their age when trying to buy cigarettes in the 12 months prior to this national study. Further, among 18- and 19-year-olds, 72% reported being asked their age (Health Canada, 2002a). In Ontario, Adlaf and Paglia (2001) reported that 32% of grade 7 to 13 students who had bought cigarettes in the previous month had been asked for proof of age.

Refused sale of tobacco

Results from the 2000 CTUMS found that 87% of youth aged 15 to 17 were refused the purchase of cigarettes. This occurred somewhat more often with males (92%) than with females (81%) (Health Canada, 2002a). No current information is available for the comparable proportion of youth refused the sale of tobacco in Alberta.

Youth access laws

Examples from Canada and Alberta

Governments in Canada are pursuing the adoption of youth access laws as part of an overall tobacco reduction strategy. In Canada, the federal Tobacco Act sets the minimum federal standards prohibiting the furnishing of tobacco products to minors. Among key provisions, the legislation makes it illegal for retailers to sell tobacco products to anyone under the age of 18 (Health Canada, 2002c). The federal Tobacco Act applies minimum standards to each province; however, some provinces have in place their own regulations prohibiting the sale of tobacco products to minors. For example, Alberta enacted a youth possession law in April 2003 that makes it illegal for youth under the age of 18 to possess or consume tobacco products in a public place (The Prevention of Youth Tobacco Use Act, 2003).

Proponents of possession laws argue that the penalties associated with being caught using tobacco will be a deterrent to further tobacco use among youth (Canadian Cancer Society, 2001). Opponents to possession laws, on the other hand, state that possession laws may do nothing to change the perceived ease of access to cigarettes (Canadian Cancer Society, 2001) and do very little to reduce youth smoking rates (Wakefield and Giovino, 2003).

Various legislation has been enacted to limit youth access to tobacco products. Examples of such legislation is shown below along with the level of jurisdiction (Federal, Provincial, Municipal).

Legislation	Federal Law	Provincial Law	Municipal Law
Establishing minimum age laws and requirements for age identification	✓		
Banning self-service displays	✓		
Limiting the placement of cigarette vending machines to adult-only establishments	✓		
Banning sale of loose cigarettes to minors	✓		
Restricting tobacco advertising	✓		
Charging fines for possession of tobacco by minors		✓	
Licensing vendors to sell tobacco			✓

Federal law: *Tobacco Act, 1997.*
Provincial (Alberta) law: *The Prevention of Youth Tobacco Use Act, 2003.*
Municipal law: Municipalities are responsible for vendor licensing laws in Alberta.
Source: National Clearinghouse on Tobacco, 2003.

Retailer compliance with youth access laws in Canada

Health Canada conducts yearly evaluations of retailer compliance with youth access to tobacco laws federally (Health Canada, 2002c). In Canada, in 2002, 71% of retailers refused to sell cigarettes to minors, which is lower than the stated goal of 80% compliance. Alberta is above the national average at 87%; however, compliance varies between cities. For example, 80% of Edmonton retailers were compliant with youth access to tobacco laws in 2002, whereas 95% of Calgary retailers were compliant (Health Canada, 2002c).

Proper enforcement of youth access to tobacco laws is an important aspect of a youth tobacco control strategy. Retailer compliance rates of 90% may be needed to affect perceived access and smoking rates (Rigotti et al., 1997). Although high levels of retailer compliance can reduce access, there is no guarantee that reduced access translates into decreased smoking rates (Canadian Cancer Society, 2001).

Effectiveness of youth access laws

Very little literature is published in Canada regarding the effectiveness of youth access laws. Therefore, studies published in the United States are primarily reported in the following section.

The issue of youth access to tobacco is an important one when discussing overall tobacco reduction strategies. Prohibiting youth access to tobacco is seen as a potentially useful option to control tobacco use among youth (Forster & Wolfson, 1998; Liang, Chaloupka, Nichter, & Clayton, 2003; Stead & Lancaster, 2000). Increased focus on tobacco availability among youth has occurred because access is seen as an important predictor of use among underage adolescents (DiFranza, Carlson, & Caisse, 1992; Forster, Hourigan, & McGovern, 1992; Forster et al., 1998; Jason, Ji, Anes, and Birkhead, 1991; Stanton, Mahalski, McGee, & Silva, 1993; Unger et al., 2002).

Controlled trials in the United States show that youth access laws, if properly enforced, can reduce youth smoking. Altman, Wheelis, McFarlane, Lee, and Fortmann (1999) found that over a span of three years, after a tobacco youth access law was implemented, tobacco sales to minors decreased in the implementation communities more than in the control communities. Grade 7 students' smoking behaviour decreased as well, but was not sustained over the three years. Jason, Berk, Schnopp-Wyatt, and Talbot (1999) also found that youth smoking rates decreased in the community of Woodridge, Illinois, after a proactive enforcement of youth access laws. Forster et al. (1998) found that among 14 Minnesota communities, those with youth access laws showed a greater decrease in smoking prevalence. Another review by Stead and Lancaster (2000) stated that youth access laws had a positive impact on youth smoking rates in approximately half the controlled studies. However, high levels of merchant compliance requiring sustained enforcement are needed to reduce youth smoking rates, and this was not common in many of the communities studied.

Others argue that youth access laws are not effective in reducing youth tobacco use. If minors feel obtaining cigarettes from commercial stores is too difficult, they will simply switch to social sources for their tobacco needs (Glantz, 2002). A controlled trial by Rigotti et al. (1997) found that even with high levels of retailer compliance to youth access laws, youth did not perceive that their access was limited and did not reduce their smoking behaviour. Fichtenberg and Glantz (2002) found that there was no evidence supporting the claim that compliance with youth access laws reduces youth smoking rates. Their claim was based on data from nine studies that showed no relationship between the level of merchant compliance with access laws and the youth smoking rates.

The federal Ministerial Advisory Council on Tobacco Control (2002) released a set of recommendations examining youth access laws to advise the government on best strategies for reducing youth access to cigarettes. The main point of the report, based on an extensive literature review published by the

Canadian Cancer Society (2002), is that youth access laws are unlikely to have an effect on youth smoking rates, but are still valuable for communicating the risks associated with youth smoking.

There is debate about whether youth access laws alone have any influence on youth smoking rates (Canadian Cancer Society, 2002; Liang et al., 2003). Evidence from the research literature about the effectiveness of youth access laws on smoking behaviour is inconclusive and mixed. Youth access laws alone may not reduce youth smoking rates, but they may be effective if there are high rates of retailer compliance (over 90%), regular enforcement of the laws with stringent penalties for non-compliance, and strong community support (Canadian Cancer Society, 2002). Further, if they are part of a comprehensive tobacco reduction strategy that uses policy options such as increased tobacco taxation and bans on smoking in public places, access laws may be effective in changing social norms about the acceptability of smoking (Forster et al., 1998).

METHODS

This report is based on secondary analysis of data collected for TAYES, 2002. Methods for the survey are reported in detail in The Alberta Youth Experience Survey, 2002: Technical Report (AADAC, 2003b). The study included questions about youth smoking behaviour and access to tobacco issues.

The study was based on a school survey of 3,394 Alberta youth in grades 7 to 12 in October and November 2002. The sample was designed as a stratified random cluster sample with selection proportionate to classroom size. The sample was stratified by five regions aggregated from regional health authority boundaries as they existed in April 2002 and by school grade. The survey was administered in randomly selected classrooms in 89 schools in 39 school divisions throughout the province.

Ethics approval was obtained from a duly constituted ethics review board consistent with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (Alberta Heritage Foundation for Medical Research, 2001). The survey was conducted in compliance with the Health Information Act (2001) and the Freedom of Information and Protection of Privacy Act (1995). Active, informed parental consent was required. Youth and parent names were kept confidential by the schools that participated in the survey and research staff had no access to these names.

The questionnaire and survey processes were pre-tested in one school with students in grades 7 to 12 (the French language version of the questionnaire was pre-tested with a French immersion class). Research staff administered an 84-question survey. The Alberta Youth Experience Survey, 2002: Technical Report (AADAC, 2003b) outlines measures taken to reduce misrepresentation by students answering the questionnaire. The response rate of 52% is consistent with similar surveys using active, informed consent.

The entire sample of students ranged from 11- to 20-year-olds; however, the majority of the sample (96%) was aged 12 to 17. In addition, 56% of the sample was female, and 3% was of Aboriginal origin.

All results reported are based on a weighted sample strategy, which ensured proper representation from all areas of Alberta. The sample of 3,394 students represents over 263,000 Alberta students in grades 7 to 12. Readers are referred to The Alberta Youth Experience Survey, 2002: Technical Report (AADAC, 2003b) for more details on the weighting strategy.

Tobacco use was analyzed based on five variables: region, age, grade, gender, and ethnicity. Age and gender variables are reported most prominently in this report. All percentages are rounded to whole numbers, so they may not add up to 100%. Chi-square tests were used to determine the relationship and the level of significance of comparisons made for each question of analysis. Each of the analyses is statistically significant at the 0.0005 level, unless otherwise noted.

When specific comparisons are made between two different groups (for example, male and female smoking rates), 95% confidence intervals (CI) were used to determine whether the differences are statistically significant or due to chance. If the confidence intervals are not overlapping, the difference between the two groups is statistically significant. In the results section, only those comparisons that are statistically significant have the 95% confidence intervals listed.

Bivariate correlation analysis was run between amount of cigarettes smoked per day and perceived access to tobacco. The Spearman's correlation coefficient is used as a measure of association between these two categorical variables.

RESULTS

The following sections detail findings from the tobacco-related questions of TAYES, 2002. For the purposes of this study, a youth smoker was defined as any youth who had smoked at least once in the last 12 months.

Tobacco use

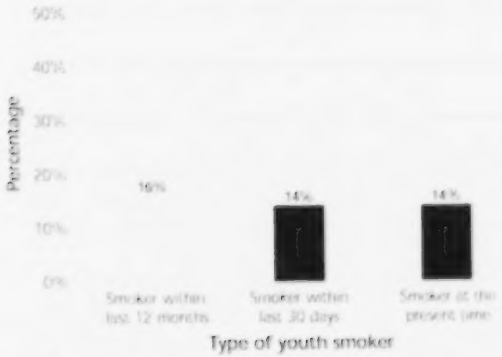
This part of the results section is based on a sample size of all students in the survey (n = 3,394), unless otherwise noted.

Tobacco use among youth

Youth were asked how often they smoked during the last 12 months. Overall, 16% of Alberta youth smoked within the last 12 months. Differences between female and male smoking rates are not statistically significant (18% versus 14%, respectively). Youth were asked how often they smoked in the previous 30 days. Fourteen per cent of youth stated they smoked every day or occasionally in the previous 30 days. Youth were also asked how often they smoked at the present time. Again, 14% of youth stated they smoked every day or occasionally at the present time. The summary of youth smoking rates is shown in Figure 1.

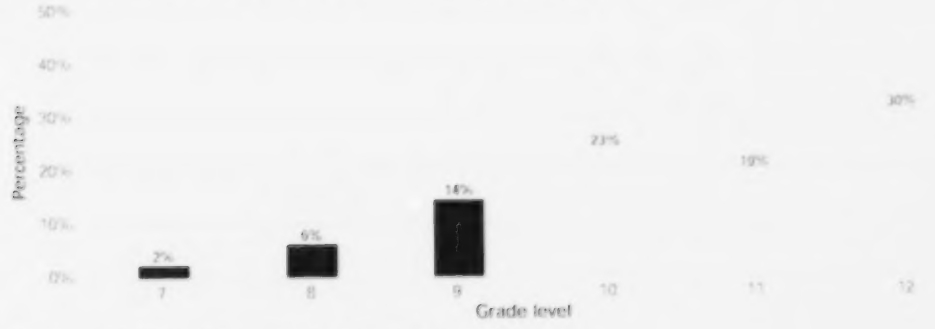
Figure 2 displays youth smoking rates by grade. The chart shows smoking rates increase as grades

Figure 1: Youth smoking rates, Alberta (N = 3,394)



Source: AADAC (2003). The Alberta Youth Experience Survey 2002.

Figure 2: Youth smoking rate by grade, Alberta (N = 3,394)

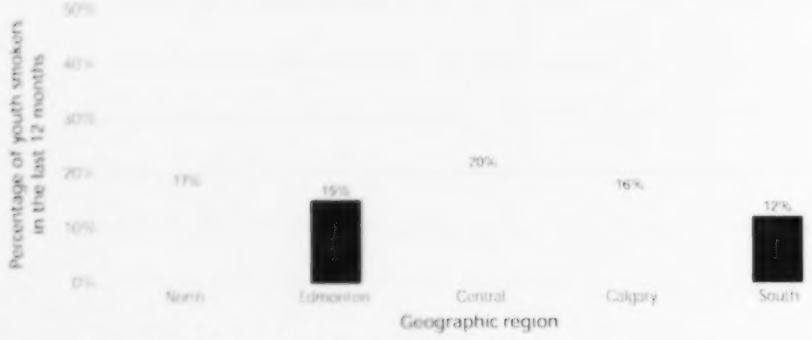


Source: AADAC (2003). The Alberta Youth Experience Survey 2002.

increase. Only 2% of Grade 7 students were smokers whereas 30% of Grade 12 students surveyed were smokers. There are significant differences in youth smoking rates by age. The proportion of smokers among youth aged 12 to 14 (7%; CI 5% to 10%) is lower than among those aged 15 to 17 (25%; CI 21% to 29%).

Figure 3 shows youth smoking rates in different regions of the province. Although there is variation between regions, the differences are not statistically significant. The central region of Alberta has youth smoking rates of 20%; the south region reports smoking rates of 12%.

Figure 3: Youth smoking rates by geographic region, Alberta (N = 3,394)



Source: AADAC (2003). The Alberta Youth Experience Survey 2002.

Smoking rates are much higher among Aboriginal youth than among non-Aboriginal youth. 37% of Aboriginal youth report smoking in the last 12 months versus only 16% of non-Aboriginal youth.

Chew tobacco rates

Youth were asked how often they have used chew tobacco in the last 12 months. Overall, 8% of youth used chew tobacco at least once in the last 12 months. More Aboriginal youth (32%) than non-Aboriginal youth (7%) reported using chew tobacco in the last 12 months.

Amount smoked per day

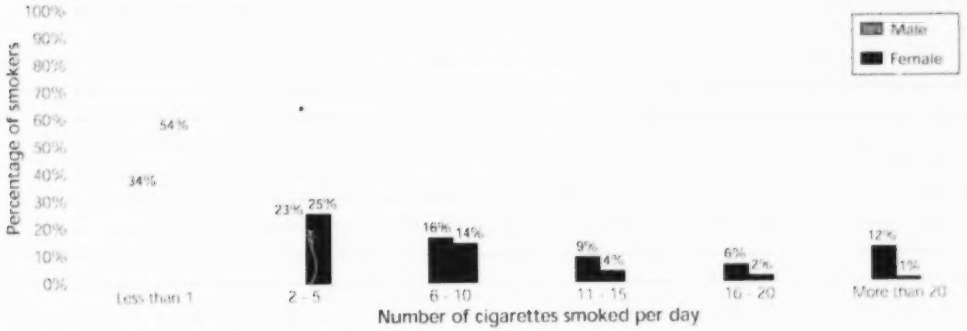
Youth were asked how much they smoked per day within the last 12 months. Almost half (46%) of the youth smokers (n = 508) reported smoking less than one cigarette per day. Only 5% of youth smokers smoke 20 or more cigarettes per day, suggesting that most youth smokers are experimental smokers.

Figure 4 shows that 54% of female smokers smoke less than one cigarette per day, but only 34% of male smokers do. This suggests that females may be more likely to be experimental smokers than males. Figure 5 shows that youth smokers aged 12 to 14 smoke fewer cigarettes per day than youth smokers aged 15 to 17.

Grade started smoking

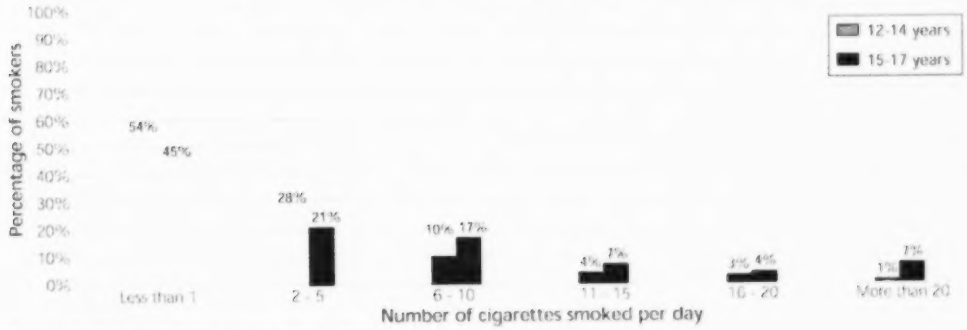
Students were asked in what grade they first started smoking. In Alberta, 60% of youth smokers (n = 508) said that they started smoking in grades 6 to 8 (see Figure 6). Age of starting smoking varies by gender. For example, 30% of male youth smokers, but only 14% of female youth smokers, started smoking when they were in Grade 6.

Figure 4: Number of cigarettes smoked per day, by gender, youth smokers, Alberta (N = 508)



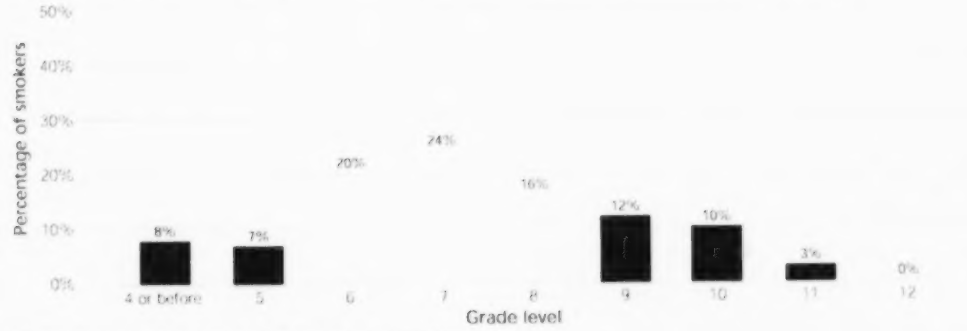
Source: AADAC (2003): The Alberta Youth Experience Survey 2002.

Figure 5: Number of cigarettes smoked per day, by age group, youth smokers, Alberta (N = 508)



Source: AADAC (2003): The Alberta Youth Experience Survey 2002.

Figure 6: Grade when first smoked cigarettes, Alberta youth smokers (N = 508)



Source: AADAC (2003): The Alberta Youth Experience Survey 2002.

Access to tobacco

This section is based on a sample size of only youth smokers (n = 508), unless otherwise noted.

Sources of cigarettes

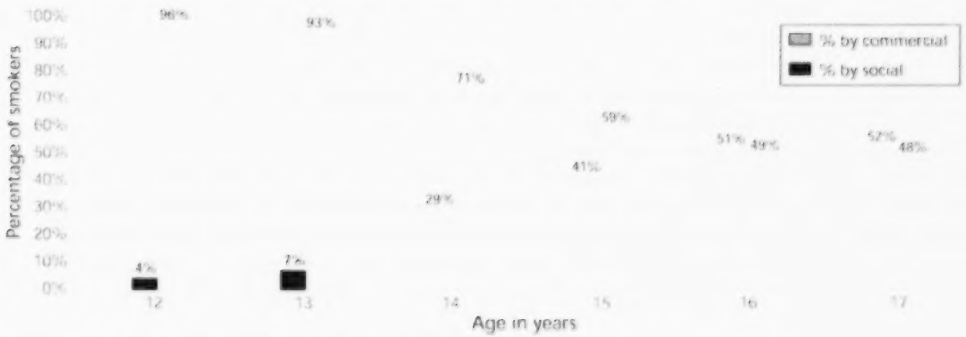
Students were asked where they usually get their cigarettes and were asked to select all the categories that applied. Table 1 shows that the most popular sources of cigarettes for youth smokers are "given by a friend or someone else" and "bought from a friend or someone else," both social sources. Small grocery stores and gas stations are the next most important sources for youth, both commercial sources. Note that percentages do not add up to 100% because students could select more than one response.

Table 1: Sources of cigarettes, youth smokers aged 12-17 years, Alberta (N = 508)

Commercial sources		Social sources	
Small grocer	31%	Given by friend or someone else	52%
Gas station	29%	Bought from a friend or someone else	34%
Another store	15%	Taken from a parent or sibling	18%
Drug store	9%	Given by a sibling	8%
Supermarket	8%	Given by parent	8%
Vending machine	7%		

Only youth up to age 17 years were included in the analysis of sources of cigarettes because youth aged 18 years and older are able to buy cigarettes legally in Alberta. Figure 7 illustrates that 16- and 17-year-olds rely on commercial sources slightly more than social sources. For youth aged 12 to 15, social sources are more important than commercial sources of tobacco.

Figure 7: Sources of cigarettes, youth smokers by age, Alberta (N = 508)



Source: AADAC (2003). The Alberta Youth Experience Survey 2002.

Perceived ease of access to tobacco

Youth were asked how difficult it would be to get cigarettes if they wanted some. Youth could select one of the response categories: "extremely difficult," "fairly difficult," "fairly easy," "extremely easy," or "don't know." Those who answered "don't know" were excluded from the analysis. Overall, 78% of all youth (n=3,394) felt that obtaining tobacco was easy (either "extremely or fairly easy"). Many non-smokers (74%) and almost all (96%) of youth smokers thought it was easy to obtain cigarettes.

Perceived ease of access to cigarettes increases with age. Among youth smokers, 46% of 12-year-olds think it is easy to get cigarettes versus 94% of 17-year-olds (see Figure 8).

Figure 8: Response to the question "If you wanted some, how difficult would it be to get cigarettes?" Youth smokers, by age, Alberta (N = 508)

Source: AADAC (2003): The Alberta Youth Experience Survey 2002.

A slight variation exists between the regions on ratings of perceived ease of access to tobacco. For example, 83% of youth in the Central region but only 74% of youth in the Calgary region stated that it is easy to get cigarettes.

Association between perceived ease of access to tobacco and smoking rates

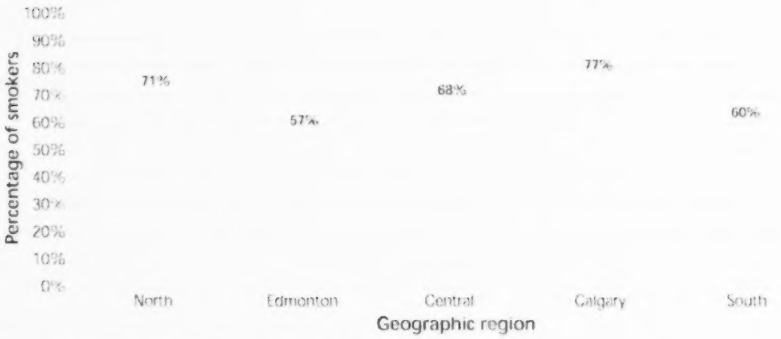
It could be hypothesized that as youth smokers find it easier to obtain cigarettes, their smoking rates would increase. If this were the case, then a perfect correlation between these two variables would yield a coefficient value of 1. When Spearman's correlation coefficient was used as a measure of association, a low coefficient value (0.141) was determined; this implies that perceived ease of access to cigarettes has little or no effect on smoking rates among Alberta youth smokers.

Buying tobacco

Youth were asked if they have ever bought cigarettes. Among youth smokers, 68% have ever bought cigarettes. There is variation in the youth smoker buying rates between regions, though this is not statistically significant. For example, the proportion of youth smokers reporting ever buying cigarettes is 77% in Calgary but 57% in Edmonton (see Figure 9).

More males reported ever buying cigarettes than females (72% of males and 65% of females), though this difference is not statistically significant. The difference in buying behaviour based on age is also not statistically significant: 71% of 15- to 17-year-olds reported ever buying cigarettes compared to 53% of 12- to 14-year-olds.

Figure 9: Percentage of youth smokers who have ever bought cigarettes, by region, Alberta (N = 508)



Source: AADAC (2003). The Alberta Youth Experience Survey 2002.

The following part of the results section is based on a sample size of youth smokers who had ever reported buying cigarettes before (n=321).

Proof of age

Youth were asked whether they had been asked their age when buying cigarettes in a store for either themselves or someone else. Among those youth smokers who had bought cigarettes before, 59% had been asked for proof of age. There is a statistically significant difference in proof of age between older and younger youth. Older youth aged 15 to 17 were more likely to be asked for proof of age (63%; CI 55% to 71%) than youth aged 12 to 14 (28%; CI 9% to 48%). In addition, fewer female youth smokers (53%) than males (68%) were asked for proof of age, although this difference is not statistically significant.

Refused sale of tobacco

Youth were asked if anyone in a store ever refused to sell them cigarettes. Among youth smokers that had bought cigarettes before, 52% had been refused sale of cigarettes. There is variation by gender and age in the results of this question, though they are not statistically significant. For example, 61% of males, but only 45% of females had been refused cigarettes. Fifty-four per cent of youth aged 15 to 17 had been refused cigarettes, but only 36% of youth aged 12 to 14.

DISCUSSION

Tobacco use

Tobacco use among youth

According to the TAYES results, the Alberta youth smoking rate (16%) is lower than the rates reported in Ontario (Adlaf & Paglia, 2001) and Nova Scotia (Poulin, 2002) (24% and 23%, respectively). The Alberta rate among 15- to 17-year-olds is also slightly lower than the rate (18%) reported in the 2000 CTUMS (Health Canada, 2002b). Caution must be taken, however, when comparing results of TAYES survey with CTUMS because the age ranges differ, and CTUMS defines current smokers as daily or occasional smokers at the present time. The benefit of TAYES results are that they provide tobacco use rates specific to Alberta for youth in grades 7 to 12, who are primarily between 12 and 17 years old.

TAYES results show that smoking rates among Aboriginal youth are higher than among non-Aboriginals. These results are not unexpected as they have been reported before (Health Canada, 1995; Reading, 1999). High Aboriginal smoking rates and chew tobacco rates among youth are reasons for concern in Alberta.

Amount smoked per day

Almost half of the youth smokers reported smoking less than one cigarette per day, suggesting that most youth are experimental smokers. Similar conclusions have been reached in other studies done of high school students in the United States (Croghan et al., 2003; Ross & Chaloupka, 2001). TAYES results suggest that males smoke more than females on a daily basis, yet females have a higher overall smoking rate. This suggests that experimental smokers are more likely to be young females than young males. TAYES results also suggest that older youth smoke more cigarettes per day than younger youth, which is consistent with 2002 CTUMS results (Statistics Canada, 2003).

Grade started smoking

TAYES results reveal that most youth smokers (60%) start smoking between grades 6 and 8. This is consistent with results from the 2000 CTUMS (Health Canada, 2002a). Although the 2000 CTUMS reported no gender differences in age of starting smoking, TAYES results suggest that males may start earlier than females. Further research is needed to confirm this result.

Access to tobacco

Sources of tobacco

Alberta youth smokers up to age 15 rely on social sources for their cigarettes more than commercial sources. Youth aged 16 and 17 rely on commercial sources slightly more than social sources. The fact that older youth rely more on commercial sources is consistent with findings from the 2000 CTUMS (Health Canada, 2002a) and other studies published in the United States (Castrucci et al., 2002; CDC, 1996; CDC, 1995; DiFranza and Coleman, 2001; Forster et al., 2003; Forster et al., 1989; Robinson et al., 1998). In addition, the importance of gas stations and convenience stores found in the TAYES results is similar to that found by Forster et al. (1997).

Perceived ease of access to tobacco

Youth, for the most part, report that it is relatively easy to obtain tobacco, either through commercial or social sources. The ease with which Alberta youth can obtain cigarettes is similar to that found in other studies in the United States (Cummings et al., 2003; Forster et al., 1989; Jones et al., 2002). TAYES results provide useful Alberta-specific information about how easy it is for youth to obtain tobacco.

Association between perceived ease of access to tobacco and smoking rates

No strong positive association exists between perceived access to tobacco and youth smoking rates. A similar result was found in The Alberta Youth Experience Survey, 2002: Technical Report (AADAC, 2003b). Part of the explanation for this is that a large number of non-smokers (74%) thought it was easy to obtain tobacco.

Buying tobacco

Two thirds (68%) of youth smokers reported buying their own cigarettes. These results are consistent with other studies (CDC, 1996; Forster et al., 1997). These results should be interpreted with caution because the TAYES question did not ask whether youth bought cigarettes from commercial or social sources.

Proof of age

Almost 60% of youth smokers who bought cigarettes had been asked for proof of age when purchasing cigarettes from a store. This TAYES result is very similar to the 2000 CTUMS results (Health Canada, 2002a), and suggests that significant portions of youth in Alberta are not asked for proof of age when buying cigarettes from a store. This is somewhat surprising because 87% of retailers in Alberta are compliant with minimum age laws in the province (Health Canada, 2002c). The TAYES result suggests that youth may approach known commercial sources that do not adhere to federal or provincial minimum age laws.

Refused sale of tobacco

Of youth smokers who have ever bought cigarettes, just over half (52%) had been refused the purchase of tobacco. This finding is lower than the 87% found by the 2000 CTUMS, among youth aged 15 to 17 (Health Canada, 2002a).

Youth access laws

Youth access laws have focused on reducing tobacco sales to minors by fining retailers who choose to sell to underage youth. However, perceived ease of access remains high among all youth, especially among youth smokers in Alberta. TAYES results confirm that youth obtain cigarettes from friends, family, and others (social sources) slightly more than from commercial sources (retailers). Therefore, tobacco control programs will need to target social sources of tobacco to be more effective (Ribisl, 2003b).

Laws targeting only illegal commercial sales of cigarettes may not be effective in reducing both access to cigarettes and youth smoking rates (Croghan et al., 2003). Therefore, more comprehensive strategies that incorporate tax hikes, education, treatment programs, and enforcement of legislation are more likely to succeed in reducing youth access to tobacco and youth smoking rates.

Youth possession laws

Alberta is one of few provinces in Canada to have passed a law making it illegal for anyone under the age of 18 to possess or consume tobacco in a public place. Anyone under 18 years old found publicly using or in possession of tobacco product will be subject to a fine of $100 and/or seizure of the product (The Prevention of Youth Tobacco Use Act, 2003). It will be necessary to conduct further research on youth smoking behaviour in Alberta to determine how The Prevention of Youth Tobacco Use Act affects youth access to tobacco and youth smoking rates in the future.

CONCLUSION

- Alberta youth smoking rates are slightly lower than those found in other areas in Canada. The high rates of Aboriginal youth using tobacco and chew tobacco, however, continue to be a concern in Alberta.
- Alberta youth get their cigarettes primarily from social sources such as friends and family members. To reduce youth smoking rates, interventions may need to target parents, schools, and other locations where youth interact.
- Small grocers, corner stores, and gas stations are popular sources of tobacco for youth, especially for 16- and 17-year-olds. If retailer compliance checks are done in the future, then small grocers, corner stores, and gas stations should be targeted more closely.
- Youth perceive that there is easy access to cigarettes. However, perceived ease of access to cigarettes is not significantly associated with youth smoking rates. This is likely because a large proportion of non-smokers perceive easy access to cigarettes, and many smokers obtain their cigarettes from social sources. Access to social sources for tobacco can be easier than access to commercial sources.
- A large portion of youth smokers who buy tobacco reported that they had never been asked for proof of age nor refused sale of tobacco.
- The effectiveness of youth access laws alone in reducing youth access to tobacco and reducing smoking rates is questionable. Although the laws alone may not reduce access to tobacco or reduce smoking rates, they do serve as a reminder of the risks associated with youth smoking. A comprehensive tobacco reduction strategy that enacts policy measures such as taxation, enforced legislation, education, and treatment is more likely to be effective in reducing both youth access to tobacco and youth smoking rates.

GLOSSARY

AADAC — The Alberta Alcohol and Drug Abuse Commission

CTUMS — The Canadian Tobacco Use Monitoring Survey

Commercial source of tobacco — Any retail source of tobacco such as stores or vending machines

Smoking rate — Used generally to refer to the proportion of people who smoke in a population at a specified point in time

Social source of tobacco — Any informal source of tobacco such as parents, friends, or someone else

TAYES — The Alberta Youth Experience Survey

Youth — Any student between grades 7 and 12

Youth smoker — Any youth who has smoked a cigarette at least once in the past 12 months

Youth access law — Any law that prohibits tobacco sales to minors by retailers or prohibits giving or supplying tobacco to youth. Some laws can include provisions making it illegal for underage youth to purchase, possess, or use tobacco products (Canadian Cancer Society, 2002)

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